UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/894,621	06/28/2001	Tae-Yong Kim	8836-135 (IB10153-US)	6149

			EXAMINER
7590	07/12/2004		CATHEY II, PATRICK H

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ART UNIT	PAPER NUMBER
2613	

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.		Applicant(s)	
Office Action Summary	09/894,621		KIM, TAE-YONG	
	Examiner		**Art Unit**	
	Patrick H. Cathey II		2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____ .

2a) ☐ This action is **FINAL.**   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
   closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-25* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-25* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☒ All b) ☐ Some * c) ☐ None of:

      1. ☒ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
         application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____ .

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____ .

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim's 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Ribas-Corbera (US 6,535,251) in view of Tsai (US 6,529,552) and in further view of

Dieterich (US 6,100,940).

As for Claim 1, Ribas-Corbera teaches using a video encoder for encoding data

(57) and an encoding buffer for storing the encoded video data (54). The encoder rate

controller is for estimating the number of bits quantized from a target quantization

parameter during a frame of video data corresponding to the discrete cosine transform

(DCT) coefficients of the frame (56). He also teaches a channel rate controller for

generating parameters for smoothing and bandwidth renegotiation corresponding to the

number of bit generated from the encoder rate controller (68) (Column 1, lines 16-19;

Column 3, line 56 to Column 4, line 3; Column 9, lines 47-51; also see figure 5).

Although Ribas-Corbera fails to teach a network for generating negotiated

parameters corresponding to the parameters generated from the channel rate controller,

and a counter for transmitting the video data stored in the encoder buffer through the

network, Tsai does (Column 1, line 66 to Column 2, line 16). Since it is well known in

encoding video data to route the data through a network it would have been obvious to

one of ordinary skill to use the structured type of network to transmit the data.

Although the Ribas-Corbera and Tsai references fail to teach the quantization

parameters based on slice level, Dieterich does (Column 14, lines 40-47). Since

Dieterich shows that the parameters can be based on GOP, frame, strip or slice it would

have been obvious to on of ordinary skill to adjust based on slice. Further doing so

would allow for more frequent checks on target variation.

As for Claim's 2-11, Ribas-Corbera teaches a channel rate controller generating

the maximum number of bits capable of being generated and stored during the frame

period where the channel rate controller determines an actual bit rate of the encoded

video data, and where the channel rate controller is filled with bits to protect an

underflow of the encoder buffer. He also teaches a system where the parameters for

smoothing and bandwidth renegotiation generated from the channel rate controller

comprise of peak rate, sustainable rate and maximum burst length where the peak rate

is smoothed to the sustainable rate. The encoder rate controller generates an actual

number of bits quantized by the target quantization parameter during the frame

corresponding to the maximum number of bits generated from the channel rate

controller. He also teaches a system where the counter is able to increase the number

of bits and decrease the sustainable bits during the frame period. He also teaches a

system where when the counter is full, the counter discards the data transferred from

the encoder buffer, and also uses a network comprising of an asynchronous transfer

mode (ATM) as well as having the capabilities of encoding video data that comprises a

variable bit rate MPEG video data (Column 1, lines 16-19 and lines 46-57; Column 2, lines 29-50; Column 3, line 56 to Column, 4 line 3; Column 4, line 54 to Column 5, line 15; Column 7, lines 10-26).

Although Ribas-Corbera fails to teach the use of a network, Tsai does (Column 1, line 66 to Column 2, line 16). Since it is well known in encoding video data to route the data through a network it would have been obvious to one of ordinary skill to use the structured type of network to transmit the data.

Claim's 12,13, 15-20 and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ribas-Corbera in view of Tsai and in further view of Fert (US 6,205,174).

As for claim 12, Ribas-Corbera teaches the encoded frames of video data and the encoded information associated. He also estimates a maximum number of bits capable of being generated (Column 3, line 56 to Column 4, line 3; Column 4, lines 54-67).

Although Ribas-Corbera fails to teach the dynamically negotiating with a network to generate traffic parameters for smoothed traffic and required bandwidth, Tsai does (Column 1, line 66 to Column 2, line 16). Since it is well known in encoding video data to route the data through a network it would have been obvious to one of ordinary skill to use the structured type of network to transmit the data.

Although Ribas-Corbera and Tsai fail to teach the estimation of a number of bits quantized from a target quantization parameter during a given frame of the video data

based on encoding information of the given frame, as well as computing a target bit rate

using the estimated number of bits quantized with the target quantization parameters

and the estimated maximum number of bits, and generating quantization parameters to

control the actual encoding rate so that a number of actual bits generated does not

exceed the target bit rate, Fert does (Column 12, lines 33-42). It would have been

obvious to one of ordinary skill to estimate a number of bits quantized and use them for

target quantization parameters.

As for claim's 13 and 15-18, Bibas-Corbera teaches a method where the

encoding information comprises discrete cosine transformation (DCT) coefficients, a

method where the step of generating quantization parameters to control the actual

encoding rate comprises generating quantization parameters based on slice level and a

method where the traffic parameters comprise peak rate, sustainable rate and

maximum burst length comprising the step of smoothing the peak rate to the

sustainable rate. He also teaches a method comprising the step of protecting against

an underflow in an encoder buffer by stuffing bits and a method comprising the step of

generating the actual numbers of bits quantized by the target quantization parameter

during the given frame corresponding to the estimated maximum number of bits

(Column 4, line 54-67; Column 5, lines 1-15; Column 7, lines 10-26; Column 9, lines 47-

51).

As for Claim's 19, 20 and 22-25, most of the limitations of these claims have

been noted in the above rejection of Claim's 12, 13 and 15-18. Bibas-Corbera teaches

a program storage device readable by a machine, tangibly embodying a program of

instructions executable by the machine to perform method steps for transmission of variable bit rate MPEG video traffic with consistent quality (Column 4, lines 13-20).

Claim's 14 are 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ribas-Corbera in view of Tsai and in further view of Fert and Dieterich (US 6,100,940).

As previously shown above, Dieterich shows that generating quantization parameters can be based on the slice level (Column 14, lines 40-47).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Alexandre (US 6,212,233) uses variable bit rate to encode data as well.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick H. Cathey II whose telephone number is (703) 305-4909. The examiner can normally be reached on M-F 7:30 to 5:00 (Every other friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Kelley can be reached on (703) 503-4856. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

                                        Patrick H. Cathey II
                                        Examiner
                                        Art Unit 2613

PHC II

CHRIS KELLEY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY 0